

1 **(March 13, 1995)**

2 **Testing**

3 The Contractor shall make shotcrete test panels for evaluation of shotcrete
4 quality, strength, and aesthetics. Both preproduction and production test panels,
5 shall be prepared. All cores obtained for the purpose of shotcrete strength testing
6 shall have the following minimum dimensions:

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- 8 a. The core diameter shall be at least 3 times the maximum aggregate size,
9 but not less than 2 inches.
- 10
- 11 b. The core height shall be a minimum of 1.5 times the core diameter.
- 12

13 The cores will be obtained and tested in accordance with AASHTO T 24. Cores
14 removed from the panel shall be immediately wrapped in wet burlap and sealed in
15 a plastic bag. Cores shall be clearly marked to identify from where they were
16 taken and whether they are for pre-production or production testing. If for
17 production testing, the section of the wall represented by the cores shall be clearly
18 marked on the cores. Cores shall be delivered to the Engineer within 2 hours of
19 coring. The remainder of the panels shall remain the property of the Contractor.

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21 **Pre-production Testing**

22 At least one 36-inch by 36-inch panel for each mix design shall be prepared
23 for evaluation and testing of the shotcrete quality and strength. One 48-inch
24 by 48-inch qualification panel shall be prepared for evaluation and approval
25 of the proposed method for shotcrete installation, finishing, and curing. Both
26 the 36-inch and the 48-inch panels shall be constructed using the same
27 methods and initial curing proposed to construct the shotcrete wall, except
28 that the 36-inch panel shall not include wire reinforcement. The 36-inch
29 panel shall be constructed to the minimum thickness necessary to obtain the
30 required core samples. The 48-inch panel shall be constructed to the same
31 thickness as proposed for the wall face. Production shotcrete work shall not
32 begin until satisfactory test results are obtained and the panels are approved
33 by the Engineer.

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35 **Production Testing**

36 The Contractor shall make at least one 36-inch by 36-inch panel for each
37 section of wall shot, or as many as directed by the Engineer. A section is
38 defined as one day's placement. The production panels shall be constructed
39 using the same methods and initial curing used to construct the shotcrete
40 wall, but without wire reinforcement. The panels shall be constructed to the
41 minimum thickness necessary to obtain the required core samples. If the
42 production shotcrete is found to be unsuitable based on the results of the test
43 panels, the section(s) of the wall represented by the test panel(s) shall be
44 repaired or replaced to the satisfaction of the Engineer at no cost to the
45 Contracting Agency.